

AMENDMENTS TO THE CLAIMS

1. (Currently amended) A method for ultrasonic welding of parts by means of an ultrasonic welding device comprising at least a generator, a converter, and a sonotrode, based on a set curve of a time-dependent welding parameter appropriate to a welding connection meeting set requirements, where the welding duration corresponding to the set curve runs between a starting time t_0 and an end time t_e , and

a) ~~where during the welding of the parts an actual curve of the time-dependent parameter is measured, and~~

b) ~~in the period between t_0 and t_e the actual curve is compared with the set curve and,~~

c) ~~wherein in the event the actual curve differs from the set curve at a time of comparison, depending on the difference between the set curve and the actual curve, at least one welding process parameter affecting welding is altered to a value chosen based on that existing a difference between the set curve and the actual curve at a time of comparison,~~ in order that the difference is reduced during welding after the time of comparison and the actual curve converges toward the set curve, and

wherein the at least one welding process parameter to be altered consists of one or more of: an amplitude of the sonotrode, a frequency of the sonotrode, a pressure acting on the parts to be welded, a force acting on the parts to be welded, and an energy input into the parts to be welded.

2. (Original) The method of claim 1, wherein the set curve is compared with the actual curve at a time t_1 , where $t_0 < t_1 < t_e$.

3. (Original) The method of claim 1, wherein the actual curve is compared with the set curve at an identical power value.

4. (Original) The method of claim 1, wherein the actual curve is compared with the set curve at an identical energy input measured from the beginning of welding.

5. (Original) The method of claim 1, further comprising:

based on a difference between the actual curve and the set curve, altering at least one process parameter of correspondingly stored values.

6. (Original) The method of claim 1, wherein at least one welding process parameter is altered gradually over time.
7. (Original) The method of claim 1, wherein the actual curve is matched to the set curve by a regulation process.
8. (Original) The method of claim 1, wherein the at least one welding process parameter is altered based on comparisons made at various times $t_1, t_2 \dots t_n$ where $n \geq 2$ between the set values and actual values.
9. (Original) The method of claim 8, wherein a regulation of the at least one welding process parameter based on differences between the set curve and actual curve is performed at the times $t_1, t_2 \dots t_n$ where $n \geq 2$.
10. (Original) The method of claim 1, wherein the emitted/received power of the ultrasonic welding device is selected as the time-dependent welding parameter.
11. (Cancelled)
12. (Original) The method of claim 1, wherein one or more welding process parameters are altered singly.
13. (Original) The method of claim 1, wherein one or more welding process parameters are altered jointly.
14. (Original) The method of claim 1, wherein welding is regulated over its full duration based on the respective current difference between set curve and actual curve.
15. (Original) The method of claim 1, wherein welding is regulated over at least part of its duration based on the respective current difference between set curve and actual curve.
16. (Withdrawn) A method for ultrasonic welding of parts by means of an ultrasonic welding device comprising at least a generator, a converter, and a sonotrode, based on a set curve of a time-dependent welding parameter appropriate to a welding connection meeting set requirements, where the welding duration corresponding to the set curve runs between a starting

time t_0 and an end time t_e , and where during the welding of the parts an actual curve of the time-dependent parameter is measured, and in the period between t_0 and t_e the actual curve is compared with the set curve and,

wherein depending on the existing difference between the set curve and the actual curve at least one welding process parameter affecting welding is altered such that due to a closed loop control the actual curve converges toward the set curve during further welding.

17. (Withdrawn) The method of claim 16, wherein the set curve is compared with the actual curve at a time t_1 , where $t_0 < t_1 < t_e$.

18. (Withdrawn) The method of claim 16, wherein the actual curve is compared with the set curve at an identical power value.

19. (Withdrawn) The method of claim 16, wherein the actual curve is compared with the set curve at an identical energy input measured from the beginning of welding.

20. (Withdrawn) The method of claim 16, further comprising:

based on a difference between the actual curve and the set curve, altering at least one process parameter of correspondingly stored values.

21. (Withdrawn) The method of claim 16, wherein at least one welding process parameter is altered gradually over time.

22. (Withdrawn) The method of claim 16, wherein the actual curve is matched to the set curve by a regulation process.

23. (Withdrawn) The method of claim 16, wherein the at least one welding process parameter is altered based on comparisons made at various times $t_1, t_2 \dots t_n$ where $n \geq 2$ between the set values and actual values.

24. (Withdrawn) The method of claim 23, wherein a regulation of the at least one welding process parameter based on differences between the set curve and actual curve is performed at the times $t_1, t_2 \dots t_n$ where $n \geq 2$.

25. (Withdrawn) The method of claim 16, wherein the emitted/received power of the ultrasonic welding device is selected as the time-dependent welding parameter.
26. (Withdrawn) The method of claim 16, wherein the at least one welding process parameter to be altered includes one or more of: an amplitude of the sonotrode, a frequency of the sonotrode, a pressure acting on the parts to be welded, a force acting on the parts to be welded, and an energy input into the parts to be welded.
27. (Withdrawn) The method of claim 16, wherein one or more welding process parameters are altered singly.
28. (Withdrawn) The method of claim 16, wherein one or more welding process parameters are altered jointly.
29. (Withdrawn) The method of claim 16, wherein welding is regulated over its full duration based on the respective current difference between set curve and actual curve.
30. (Withdrawn) The method of claim 16, wherein welding is regulated over at least part of its duration based on the respective current difference between set curve and actual curve.